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A DETECTIVE'S VADE MECUM.

Science and the Criminal. By C. Ainsworth Mitchell.

Pp. xiv+240. (London: Sir Isaac Pitman and Sons, Ltd., 1911.) Price 6s. net.

IN the introduction to this fascinating book is suggested a special State department of criminal investigation. Police routine work, walking beats, directing traffic, quelling drunken street rows, is not, the author thinks, an effective school of deductive reasoning or scientific investigation. He would allow his investigators to enter the State service by another door; he would train them in applied science, and he would enable them to meet the clever criminal, as Sherlock Holmes loved to do, on the same intellectual plane. It would be unreasonable, however, to expect even from investigators so trained the same unerring instincts that surprise and delight us in the popular detective of fiction. The detective story is, we must remember, written backwards, and the author, having carefully laid his clues along the track of the crime, it is an easy matter for the detective, who is in the secret, to pick them up as he goes along.

Yet it is not impossible that the same faculty which enables one to devise ingenious detective stories would help in the actual detection of crime. Edgar Allan Poe, the first and greatest of detective story-writers, could not merely devise but detect. The wonderful inductive reasoning in the story of the murder of Marie Roger, in which, as in the popular puzzle game, each clue, even to the most tiny, is fitted into its place to complete the picture, was founded on the facts of a real murder which was perplexing the police at the time, and the storyteller succeeded in unravelling the mystery when the detectives had failed. In Sir A. Conan Doyle the new department of criminal investigation might find a distinguished first president; than Mr. Mitchell's volume there could be no better handbook for its schools.

The book admirably indicates how, with ever-increasing advantage and success, the weapons forged by scientific research and discovery can be availed of in society's interminable war against the criminal. Of those agencies, electricity is one of the most effective, if not for detecting, for capturing the criminal. The man in the street is not quick at grasping the possibilities of a novel invention. At first it is popularly regarded as a new toy, a matter of amazement and amusement, but of no moment in the practical affairs of men; so it was in our own day with the telephone, the phonograph, and the biograph, with the miracles of the X-rays, radium, and wireless telegraphy. A great invention must prove itself and so live. Still, we find it hard to believe that the utility of the telegraph was less in doubt, and that it was as a criminal catcher it first established its reputation with the public.

"It is strange to reflect," writes Mr. Mitchell, "that it was not until it had been employed in the capture of a criminal that it was recognised in how many

directions the electric telegraph might be of service to mankind."

Prior to that time the invention had been little better than a failure, from a commercial point of view, for though the railway companies had some time before this realised the advantages of the new system the Government had refused to have anything to say to it. It was thus little short of a revelation to the public when in 1845 the news was made known that a suspected murderer had been arrested through the agency of the telegraph.

But the telegraph has learned a lot about detective work since that time. It has even dabbled in photography, and is now able not merely to describe but to depict the fugitive criminal. The last word (so far at any rate) on this subject appears to be the telectograph invented by Mr. Thorne Baker, which, we learn from Mr. Mitchell, "may also be used with wireless installations for the transmission of simple pictures or diagrams, and by whose means it would be easy for a ship at sea to send or receive portraits." A picture of King Edward VII., transmitted in this fashion, and reproduced from the *Daily Mirror*, is one of the most striking of the many illustrations of the book.

In every department of crime science seems to have lent a hand to make easy the work of the detective and to harass the criminal, who, with his own fingertips, is now compelled to print off an infallible means of identification. The book is full of fairy tales of science, more startling than the wonders of the "Arabian Nights." The retort and microscope of the analyst are the special bugbears of adepts in the higher and more scientific walks of crime.

In the old days the murderer caught red-handed could safely deny the bloodstain was human, and the microscope was unable to contradict him. It is not so now. By a method recently discovered the analyst examining the minutest stain of blood, dry, and scarcely discernible to the naked eye on the garment of a suspect, can tell to a certainty the species of animal in the veins of which it originally flowed. There is but one exception to the rule; the blood of the anthropoid ape gives the same reaction as human blood. One might fancy the spirit of Darwin rejoicing in this singular confirmation of his theories.

Mr. Mitchell possesses in a rare degree the gift of interpreting between the man of science and the public. The complicated process by which the blood of different animals is differentiated in the test-tube is described in clear and popular language easily understood even by the least scientific. The ultimate result is summed up in a few sentences, which make the matter plain to the humblest intelligence.

"A simple method of applying the serum test has recently been discovered. A small quantity of human serum is placed into a series of tubes, and into each of these is next introduced one drop of the fresh blood of different animals diluted with salt solution, or of the dried blood dissolved in that liquid. The tubes are now allowed to stand from thirty to forty-five minutes, and then examined. If, in the case of the blood of unknown origin there is a faint red precipitate (of coagulated blood), leaving the upper liquid clear, the blood is of

human origin. On the other hand, the blood of other species of animals will have dissolved in the human serum, colouring it red. If the tubes are charged in the first place with the serum of the horse, ox, or other animal, the corresponding blood is coagulated, while that of any other animal dissolves."

Perhaps it is as well to explain to uninitiated readers that the "serum" is the liquid or watery substance of the blood.

The more cautious murderer, who resorts to the subtle agency of poison, has even more reason to dread the analyst, with his test-tube and microscope, than his brother in crime, who adopts the cruder methods of bone-breaking and blood-letting.

There has been a deal of romantic nonsense written about Cæsar Borgia and his more famous sister and their subtle and deadly poisons, "of which the secret is now fortunately lost to mankind." The modern poisoner has fluid, powder and perfume far more subtle and dangerous at his disposal, but amongst them are none that can elude the scrutiny of modern science. It is generally thought that arsenic was a constituent part of the mysterious Borgia poisons. Mr. Mitchell tells us, "with the more refined methods of analyses now available the tests are capable of detecting arsenic even in the minute proportion of one part in sixty million"—a minuteness which the imagination can scarcely conceive.

Under the pitiless eye of the microscope the most skilful and delicate handiwork of the forger is of no avail. We have in the book a hundred interesting illustrations of how his efforts are brought to nought. Does he trace the forgery over pencil writing, the microscope shows the pencil marks along the edges. Does he erase and write over, the most delicate lines are broad smudges, under the microscope the most skilful erasures are rough as unplanned wood. When the writer begins and leaves off, every joining, every doubt, every hesitation is plainly revealed, as if the eye at the microscope was watching the penman.

But it is not in scientific explanation and demonstration alone that this book excels; it is not to the scientific student alone that it appeals. By that vast and miscellaneous public vaguely classified under the head of "the general reader," it will be thankfully received and eagerly devoured. Mr. Mitchell illustrates his scientific disquisitions by vivid illustrations and judicious extracts from the most famous and exciting trials of ancient and modern times. We have many quaint pictures of the peculiar administration of justice in the good old days, when Lord Chief Justice Hale exerted himself to secure the conviction of Anne Turner, because he was afraid "lest by an acquittal countenance should be given to a disbelief in witchcraft, which he considered tantamount to a disbelief in Christianity."

We read, too, that in the trial of Anne Turner for the murder of Thomas Overbury (1615) evidence was given that she was in possession of parchments, some of which contained the names of the Blessed Trinity, others, on which were written +B+C+D+E, and another with a figure in which was inscribed the word Corpus, and to which was fastened a little piece of the skin of a man. In some of these parchments were

the names of devils, who were conjured to torment the Lord Somerset and Sir A. Mainwaring if their loves should not continue, the one to the countess and the other to Mrs. Turner.

On evidence like this poor Mrs. Turner was convicted and sentenced to death. The form of the sentence was perhaps the strangest thing of all. The learned Lord Chief Justice Hale gravely informed the trembling woman that

"she had been guilty of the seven deadly sins, and that as she was the inventor of that horrid garb, the yellow tiffany ruffs and cuffs, he hoped she would be the last by whom they would be worn. To this end he ordered that she should be hanged in that garb. This was duly done, while, as a further condemnation of the fashion to which the judge had taken exception, the hangman wore yellow bands and cuffs."

We are not surprised to learn that the fashion died with its author, but we can scarcely imagine a Lord Chief Justice of our own day solemnly deciding that a lady should be hanged in a hobble or a harem skirt by a hangman similarly attired.

We have new trials as well as old in the book. The exciting question of the guilt or innocence of Mrs. Maybrick, on which Lord Chief Justice Russell entertained such strong convictions, is elaborately and intelligently discussed. We have a brief but very vivid *résumé* of the trial of Robert Wood, whose careless and callous behaviour in the dock excited such a strange fervour of sympathy and admiration, and of whom Mr. Hall Caine wrote after watching the case throughout, "Robert Wood, innocent of the murder of Emily Dimmock, is yet the most remarkable man alive." There is no space to enumerate the hundred and odd other trials not less interesting or remarkable which are summarised in the book.

There is a singular fascination in the detective story in fiction or real life. Any editor can tell how a sensational trial inflates the circulation of his newspaper. The magazines and the publishers and the public alike are clamouring for detective stories. Of all the characters in modern fiction, Sherlock Holmes is the best-known and most admired. A man who writes one passable detective story must write nothing else, for the public will accept nothing else from his pen.

In the book under review there is the material for a hundred detective stories. Every half a dozen pages contains the suggestion of a plot which needs only a little imagination and elaboration for its completion.

It is impossible within the limits of a review to do justice to the wealth of material in the book or to the attractive form in which it is presented to the public. Hypnotism, handwriting, dog training, food adulteration and its detection, and a score of other interesting topics are elaborately discussed, and illustrated by extracts from appropriate trials. The author exhausts his subject without in the least degree exhausting the interest and delight of his reader. His book possesses the two essential qualities of a good book: it is readable and it is worth reading. It serves up scientific facts and theories in a most palatable form,

and we have high authority for the dictum, "Omne tulit punctum qui miscuit utile dulci." The illustrations, of which there is a vast variety, are scarcely less interesting than the letterpress. Once published the book becomes an essential *vade mecum* of the detective and the writer of detective stories. To the detective it supplies innumerable facts and suggestions which cannot fail to be useful in the practical work of his profession. To the writer it is a veritable mine of valuable material. The general public, who read mainly for amusement, but do not object to a little instruction unostentatiously slipped in as they go along, will find the book as fascinating as a new volume of Sherlock Holmes's adventures, and a great deal more instructive.

THE GENESIS OF CIVILISATION.

- (1) *Marriage, Totemism, and Religion. An Answer to Critics.* By the Rt. Hon. Lord Avebury. Pp. xi+243. (London: Longmans, Green, and Co., 1911.) Price 4s. 6d. net.
- (2) *The Golden Bough: a Study in Magic and Religion.* By Prof. J. G. Frazer. Third edition. Part ii., Taboo and the Perils of the Soul. Pp. xv+446. (London: Macmillan and Co., Ltd., 1911.) Price 10s. net.

(1) LORD AVEBURY opens his "answer to critics" with the following just remark:—

"In spite of the profound study which has been devoted by many learned and able philosophers to the origin and evolution of civilisation, there are still great differences of opinion on the subject."

His book, "The Origin of Civilisation and the Primitive Condition of Man," published forty-one years ago, was, as Mr. Lang rightly described it, "a pioneer work of great value and importance." But the best of theories would be expected to grow or change with the accumulation of new evidence and a closer analysis of the old, and both these conditions have been satisfied in the interval.

Among the author's original theories, that which showed most insight was the demonstration of the antagonism between idolatry and fetichism, in later terms, between religion and magic. Later research, however, has not so decidedly corroborated his views on the origins of marriage, exogamy, and totemism. A good deal of misconception that has existed, owing to the use of the same terms with different meanings, is now being removed, as in the case of "religion" itself. The one term for which there is no use is "superstition." But the modern distinction between "magic" and "religion," which Lord Avebury laid down long ago, while distinguishing between man's control of nature and "supernature's" control of man, between coercion and prayer, and so forth, rather ignores that vital component of both tendencies, which is known as animism, the belief in "spirit." The antagonism, on which Tylor has laid such stress, between animistic and non-animistic thinking, and the origin of animism itself, are certainly of profound importance in the evolution of culture.

In the case of marriage, however, there is as yet

little agreement as to the meaning of the term in reference to origins. Lord Avebury himself, "for want of a better term," spoke of the "primitive" condition as "communal marriage," both words connoting legalism. "Promiscuity" erred in the opposite direction; its modern substitute is "group-marriage." Lord Avebury's view that exogamy and individual "marriage" arose from "marriage by capture" was largely based on customs which were cases not of capture but of elopement, a very different thing. He does not seem yet to have realised the difference; for instance, he brings forward the Kurnai custom, reported as capture by Fison and Howitt. But their actual words prove it to have been elopement. Speaking of "marriageability" between exogamous sections of a tribe, I once ventured to say that no "rights" were exercised in virtue of it. I meant rights as against the actual husband. In reply to this Lord Avebury (p. 20) quotes a case of "capture" where the captor has a right to the captive. He concludes, "Mr. Crawley is mistaken in questioning the right of the conqueror to his captive," a statement I did not make. But, further, the case he quotes is merely a case of elopement!

The defloration of the bride among the Central Australians by other men than the bridegroom was explained by Spencer and Gillen as a rudimentary (*sic*) right of marriage deriving from a previous promiscuity, by Lord Avebury as an "expiation" (to the tribe) for individual marriage, a vestigial right of communal marriage. Here, as in the analogous custom of "symbolic capture," the whole question is the psychological question of the nature of "survivals." Can, for instance, such a custom as that of a mock capture of the *bridegroom* (a not uncommon custom) be explained as a survival, in "play" or ceremony, from a previous real and serious practice of kidnapping? All cases of symbolic capture can be explained as quasi-magical or symbolic expressions of the idea of connubial possession. Similarly with the other custom. We may explain it as a quasi-magical or symbolic expression of the idea of consummation. Spencer and Gillen themselves note that the participators wear magical decorations. Similar acts of physical preparation with or without a magical irradiation are found everywhere; they are often performed by the parents of the bride. A case is just to hand (*Journal of the Royal Anthropological Institute*, xl (1910), 298) from the tribes near Lake Nyasa, where a man (it may be any man) is "called in to oblige." I have enlarged on this point because it is crucial in the question of marriage-origins, and largely made use of by the supporters of the hypothesis of primitive promiscuity. On the face of it the custom has nothing to do with group-marriage of to-day, and all analogy is against its being a survival from the "horde"-rights of the past. Lord Avebury approves the conclusion of Spencer and Gillen that "individual marriage does not exist either in name or in practice in the Urabunna tribe." But they themselves admit that every woman is the special *nupa* of one man, that those men who have the right of "access" (not the same thing as marriage) must obtain his consent, and that this is asked only in such circumstances as